INDEX

ACRIVOS, ANDREAS. *See* GROVE

BAINES, W. D. *See* BRUNDRETT

BALL, F. K. Energy transfer between external and internal gravity waves, 465

BARNARD, B. J. S. *See* BENJAMIN

BENJAMIN, T. BROOKE. Note on the interpretation of two-dimensional theories of growing cavities, 137

BENJAMIN, T. BROOKE and BARNARD, B. J. S. A study of the motion of a cavity in a rotating liquid, 193

BINNIE, A. M. Annular Borda flow, 187

BLOOR, M. SUSAN. The transition to turbulence in the wake of a circular cylinder, 290

BRADSHAW, P., FERRISS, D. H. and JOHNSON, R. F. Turbulence in the noise-producing region of a circular jet, 591

BROADWELL, JAMES E. Study of rarefied shear flow by the discrete velocity method, 401

BRUNDRETT, E. and BAINES, W. D. The production and diffusion of vorticity in duct flow, 375

CALDWELL, D. R. *See* DONNELLY

CLAUS, ALFONS J. Large-amplitude motion of a compressible fluid in the atmosphere, 267

CONCUS, PAUL. Standing capillary-gravity waves of finite amplitude: Corrigendum, 264

DI PRIMA, R. C. *See* KRUEGER

DONNELLY, R. J. and CALDWELL, D. R. Experiments on the stability of hydromagnetic Couette flow, 257

DONNELLY, RUSSELL J. *See* KUZMA

FERRISS, D. H. *See* BRADSHAW

FOX, HERBERT and LIBBY, PAUL A. Some perturbation solutions in laminar boundary layer theory. Part 2. The energy equation, 433

FRATER, K. R. Flow of an elastico-viscous fluid between torsionally oscillating disks, 175

GINOUX, J. J. A steady-state technique for local heat-transfer measurement and its application to the flat plate, 21

GLAUERT, M. B. On magnetohydrodynamic flows with aligned magnetic fields, 49

GROVE, A. S., SHAIR, F. H., PETERSEN, E. E. and ACRIVOS, ANDREAS. An experimental investigation of the steady separated flow past a circular cylinder, 60

HAYES, WALLACE D. Rotational stagnation point flow, 366

HUGHES, W. F. and YOUNG, F. J. The interaction of transverse electromagnetic plane waves and a moving ionizing shock wave in the presence of a magnetic field, 11

JAMESON ANTONY. A demonstration of Alfvén waves. Part 1. Generation of standing waves, 513

JOHNSON, R. F. *See* BRADSHAW

JONES, J. G. On the near-equilibrium and near-frozen regions in an expansion wave in a relaxing gas, 81

KAHN, F. D. Transverse plasma waves and their instability. Part 2, 210

KANWAL, R. P. Drag on an axially symmetric body vibrating slowly along its axis in a viscous fluid, 631

KELLY, D. L., MARTIN, B. W. and TAYLOR, E. S. A further note on the bathtub vortex, 539

KELLY, H. R., RENTZ, A. W. and SIEKMANN, J. Experimental studies on the motion of a flexible hydrofoil, 30

KRUEGER, E. R. and DI PRIMA, R. C. The stability of a viscous fluid between rotating cylinders with an axial flow, 528

KUZMA, DENNIS C., MAKI, E. ROLAND and DONNELLY, RUSSELL J. The magnetohydrodynamic squeeze film, 395

LIBBY, PAUL A. *See* FOX

LOCKWOOD, F. C. *See* MARTIN

MCCARTHY, J. H. Steady flow past non-uniform wire grids, 491

MAKI, E. ROWLAND. *See* KUZMA

MARTIN, B. W. and LOCKWOOD, F. C. Entry effects in the open thermosyphon, 246

MARTIN, B. W. *See* KELLY

MESSERLE, H. K. The travelling-wave plasma converter, 577

MICHALKE, A. On the inviscid instability of the hyperbolic-tangent velocity profile, 543

NIELD, D. A. Surface tension and buoyancy effects in cellular convection, 341

ØIANN, HENRY. *See* PALM

OLMSTEAD, W. E. and RAYNOR, S. Depression of an infinite liquid surface by an incompressible gas jet, 561

PALM, ENOK and ØIANN, HENRY. Contribution to the theory of cellular thermal convection, 353

PARK, C. *See* STOLLERY

PETERSEN, E. E. *See* GROVE

RAYNOR, S. *See* OLMSTEAD

RENTZ, A. W. *See* KELLY

ROTT, N. *See* TOOMRE

SCRIVEN, L. E. and STERNLING, C. V. On cellular convection driven by surface-tension gradients: effects of mean surface tension and surface viscosity, 321

SHAIR, F. H. *See* GROVE

SIEKMANN, J. *See* KELLY

SLATTERY, JOHN C. Time-reversed flows, 625

SPENCE, D. A. and WOODS, B. A. A review of theoretical treatments of shock-tube attenuation, 161

STERNLING, C. V. *See* SCRIVEN

STOLLERY, J. L. and PARK, C. Computer solutions to the problem of vibrational relaxation in hypersonic nozzle flows, 113

TAYLOR, E. S. *See* KELLY

THOMAS, R. H. and WALTERS, K. The stability of elastico-viscous flow between rotating cylinders. Part 2, 557

TOOMRE, A. and ROTT, N. On the pressure induced by the boundary layer on a flat plate in shear flow, 1

TRUSTRUM, KATHLEEN. Rotating and stratified fluid flow, 415

TURNER, J. S. The dynamics of spheroidal masses of buoyant fluid, 481

UBEROI, MAHINDER S. Directional spectrum of wind-generated ocean waves, 452

URSELL, F. The decay of the free motion of a floating body, 305

VAN DYKE, MILTON. Higher approximations in boundary-layer theory. Part 3. Parabola in uniform stream, 145

WALTERS, K. *See* THOMAS

WEBSTER, C. A. G. An experimental study of turbulence in a density-stratified shear flow, 221

WOODING, R. A. Mixing-layer flows in a saturated porous medium, 103

WOODS, B. A. *See* SPENCE

WOODS, L. C. On the theory of growing cavities behind hydrofoils, 124

YOUNG, F. J. *See* HUGHES

REVIEWS

An Introduction to Incompresible Flow Machines, 160

The Perfect Gas, 320

An Introduction to Atmospheric Physics, 479

Experimental Fluid Mechanics, 637

CONTENTS TO VOLUME 19

PART 1 MAY 1964

On the pressure induced by the boundary layer on a flat plate in shear flow. A. TOOMRE and N. ROTT *page* 1

The interaction of transverse electromagnetic plane waves and a moving ionizing shock wave in the presence of a magnetic field. W. F. HUGHES and F. J. YOUNG 11

A steady-state technique for local heat-transfer measurement and its application to the flat plate. J. J. GINOUX 21

Experimental studies on the motion of a flexible hydrofoil. H. R. KELLY, A. W. RENTZ and J. SIEKMANN 30

On magnetohydrodynamic flows with aligned magnetic fields. M. B. GLAUERT 49

An experimental investigation of the steady separated flow past a circular cylinder. A. S. GROVE, F. H. SHAIR, E. E. PETERSEN and ANDREAS ACRIVOS 60

On the near-equilibrium and near-frozen regions in an expansion wave in a relaxing gas. J. G. JONES 81

Mixing-layer flows in a saturated porous medium. R. A. WOODING 103

Computer solutions to the problem of vibrational relaxation in hypersonic nozzle flows. J. L. STOLLERY and C. PARK 113

On the theory of growing cavities behind hydrofoils. L. C. WOODS 124

Note on the interpretation of two-dimensional theories of growing cavities. T. BROOKE BENJAMIN 137

Higher approximations in boundary-layer theory. Part 3. Parabola in uniform stream. MILTON VAN DYKE 145

REVIEWS

An Introduction to Incompressible Flow Machines 160

PART 2 JUNE 1964

A review of theoretical treatments of shock-tube attenuation. D. A. SPENCE and B. A. WOODS 161

Flow of an elastico-viscous fluid between torsionally oscillating disks. K. R. FRATER 175

Annular Borda flow. A. M. BINNIE 187

A study of the motion of a cavity in a rotating liquid. T. BROOKE BENJAMIN and B. J. S. BARNARD 193

Transverse plasma waves and their instability. Part 2. F. D. KAHN *page* 210

An experimental study of turbulence in a density-stratified shear flow. C. A. G. WEBSTER 221

Entry effects in the open thermosyphon. B. W. MARTIN and F. C. LOCKWOOD 246

Experiments on the stability of hydromagnetic Couette flow. R. J. DONNELLY and D. R. CALDWELL 257

Standing capillary-gravity waves of finite amplitude: Corrigendum. PAUL CONCUS 264

Large-amplitude motion of a compressible fluid in the atmosphere. ALFONS J. CLAUS 267

The transition to turbulence in the wake of a circular cylinder. M. SUSAN BLOOR 290

The decay of the free motion of a floating body. F. URSELL 305

REVIEWS

The Perfect Gas 320

PART 3 JULY 1964

On cellular convection driven by surface-tension gradients: effects of mean surface tension and surface viscosity. L. E. SCRIVEN and C. V. STERNLING 321

Surface tension and buoyancy effects in cellular convection. D. A. NIELD 341

Contribution to the theory of cellular thermal convection. ENOK PALM and HENRY ØIANN 353

Rotational stagnation point flow. WALLACE D. HAYES 366

The production and diffusion of vorticity in duct flow. E. BRUNDRETT and W. D. BAINES 375

The magnetohydrodynamic squeeze film. DENNIS C. KUZMA, E. ROLAND MAKI and RUSSELL J. DONNELLY 395

Study of rarefied shear flow by the discrete velocity method. JAMES E. BROADWELL 401

Rotating and stratified fluid flow. KATHLEEN TRUSTRUM 415

Some perturbation solutions in laminar boundary layer theory. Part 2. The energy equation. HERBERT FOX and PAUL A. LIBBY 433

Directional spectrum of wind-generated ocean waves. MAHINDER S. UBEROI 452

Energy transfer between external and internal gravity waves. F. K. BALL 465

REVIEWS

An Introduction to Atmospheric Physics 479

PART 4 AUGUST 1964

The dynamics of spheroidal masses of buoyant fluid. J. S. TURNER *page* 481

Steady flow past non-uniform wire grids. J. H. MCCARTHY 491

A demonstration of Alfvén waves. Part 1. Generation of standing waves. ANTONY JAMESON 513

The stability of a viscous fluid between rotating cylinders with an axial flow. E. R. KRUEGER and R. C. DI PRIMA 528

A further note on the bathtub vortex. D. L. KELLY, B. W. MARTIN and E. S. TAYLOR 539

On the inviscid instability of the hyperbolic-tangent velocity profile. A. MICHALKE 543

The stability of elastico-viscous flow between rotating cylinders. Part 2. R. H. THOMAS and K. WALTERS 557

Depression of an infinite liquid surface by an incompressible gas jet. W. E. OLMSTEAD and S. RAYNOR 561

The travelling-wave plasma converter. H. K. MESSERLE 577

Turbulence in the noise-producing region of a circular jet. P. BRADSHAW, D. H. FERRISS and R. F. JOHNSON 591

Time-reversed flows. JOHN C. SLATTERY 625

Drag on an axially symmetric body vibrating slowly along its axis in a viscous fluid. R. P. KANWAL 631

REVIEWS

Experimental Fluid Mechanics 637

INDEX TO VOLUME 19 639